

## **Response to Comments - Proposed Christina Low-Flow TMDLs Revision**

On March 1, 2002, EPA Region III issued a public notice for a proposed revision of the Christina River Basin Total Maximum Daily Loads (TMDLs) under Low-Flow Conditions. The proposed revisions to the TMDLs established by EPA on January 19, 2001 were announced in newspapers in Wilmington, DE and Chester County, PA. Copies of the proposed revisions were mailed to affected wastewater treatment dischargers in the Christina River Basin.

In the public notice, EPA stated that a decision on whether to hold a public hearing on the proposed TMDL revisions would be based on comments submitted on the revisions. Comments by letter dated March 28, 2002 were received from just a single party, Hall & Associates, representing the Downingtown Area Regional Authority. EPA has reviewed these comments and 1) prepared the attached response, and 2) made a determination that the comments do not constitute a need to schedule a public hearing on the proposed revisions. EPA's response to comments follows the order in which the comments were made.

## **Response to Hall & Associates March 28, 2002 Comments - Proposed Christina Low-Flow TMDLs Revision (March 1, 2002)**

### **A. Periphyton Model Fundamentally Flawed**

The comments in this section raise issues on periphyton growth projections and how they were used in the Christina River Basin TMDL water quality model in assessing minimum dissolved oxygen values in the watershed, notably the East Branch of Brandywine Creek.

In response to these comments, EPA's contractor for the development of the Christina River Basin TMDL Environmental Fluid Dynamics Code water quality model provided a detailed review of the issues raised. EPA provides this review as its response to these comments as an attachment to this document.

### **B. Modeling Assumptions Do Not Reflect Relevant Conditions**

The comments in this section include three points: 1) assumptions used in the revised TMDLs will occur less frequently than one percent of the time and PADEP regulations (25 PA Code 96.3) set a compliance goal of 99 percent to achieve WQS; 2) the revised flow figure of 7.134 mgd used for the Downingtown facility incorporates wet weather flows and would not be appropriate for the conditions used to set the revised TMDLs and 3) the design conditions, particularly the permitted limits for each parameter, used as the basis for the TMDL are inappropriate for the critical conditions analysis used to develop the revised TMDLs.

#### **EPA Response:**

Several of these points and related issues were made in comments submitted on the Christina River Basin Low-Flow TMDL issued by EPA on January 19, 2001. In the Responsiveness Summary prepared for the public hearing and open comment period, comments (and responses) 01-A-03, 02-B-02, 07-G-02 and 10-J-05 are pertinent to some of the issues raised by these comments and are hereby incorporated here by reference.

On the question of the PADEP 99% compliance goal, PADEP interprets this goal in the context of setting NPDES effluent limitations as equivalent to a 7Q10 (7-day average flow occurring once in 10 years) low-flow analysis. Limits set on this basis are considered to ensure that WQS are maintained 99% of the time. As EPA used a 7Q10 analysis in calculating the TMDLs, the recommended limits do not impose a greater WQS compliance requirement than employed in PADEP regulations.

The revised flow figure for the Downingtown Area Regional Authority of 7.134 mgd (one of the flow figures that was found in error in the original TMDL calculation - 7.0 mgd was previously used) is the permitted flow value used in establishing NPDES permit limits for the Downingtown facility. EPA used maximum permitted flow values in calculating the TMDLs. As was explained in comments on the original Christina TMDL, this is standard EPA practice and is a consideration in establishing a reasonable Margin of Safety in the TMDL calculations.

Regardless of how the flow would be comprised, Downingtown is permitted to discharge 7.134 mgd and this figure must be used in the TMDL calculations.

The design conditions and critical conditions analysis used in the TMDL calculations are standard EPA practice. The use of the 7Q10 flow condition has been previously discussed above. The maximum permitted flow figures are appropriate when used in steady-state conditions as employed in the Christina River Basin TMDL calculations. The combination of these factors is designed to produce a 'worst-case' but possible scenario to ensure that WQS will be met and helps provide a reasonable Margin of Safety as noted above.

**C. EPA's Approach is More Restrictive Than Necessary to Achieve Standards**

The comments in this section suggest that the revised TMDLs should only be used to set permit limitations during the month of August when critical flow and temperature conditions are expected to occur simultaneously.

**EPA Response:**

Both TMDL calculation procedures and NPDES permitting processes employed a critical conditions analysis to determine appropriate limitations. While low flow information and model calibrations may be limited to a period as short as one month (e.g., August) or less, comparable low flow conditions can occur at other times during the year. PADEP procedures for seasonal applications of NPDES permit limits employ a May 1 to October 31 period. The revised Christina River Basin low-flow TMDL and the specific TMDL reductions have been clarified in the revised TMDL document to indicate that the TMDL Waste load allocations are applicable during the May 1 to October 31 period used in PADEP permitting decisions. EPA believes this is an appropriate seasonal approach to ensure adequate protection of WQS and provide a reasonable Margin of Safety.